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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,571	01/19/2002	Johan Engstrom	47862.256153	1747

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EXAMINER
HOLMES, MICHAEL B

ART UNIT	PAPER NUMBER
2121	4

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/683,571	ENGSTROM ET AL.
	Examiner	**Art Unit**	
	Michael B. Holmes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2002* .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____ .

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

Examiner's Detailed Office Action

1.   This action is responsive to application **09/683,571**, filed **January 19, 2002**.

2.   **Claims 1-20** have been examined.

Information Disclosure Statement

3.   Applicant is respectfully remind of the ongoing Duty to disclose 37 C.F.R. 1.56 all

pertinent information and material pertaining to the patentability of applicant's claimed in-

vention, by continuing to submitting in a timely manner PTO-1449, Information Disclosure

Statement (IDS) with the filing of applicant's of application or thereafter.

Drawings

4.   The formal drawings have been reviewed by the United States Patent & Trademark

Office of Draftperson's Patent Drawings Review.

Specification

5.   The specification has not been checked to the extent necessary to determine the presence

of all possible minor errors. Applicant's cooperation is required in correcting any errors of which

applicant may become aware in the specification. Appropriate correction is required.

Claim Interpretation

6.   Office personnel are to give claims their **"broadest reasonable interpretation"** in light

of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28

(Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not

read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551(CCPA

1969). See *also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322(Fed. Cir. 1989)

("During patent examination the pending claims must be interpreted as broadly as their terms

reasonably allow. . . . The reason is simply that during patent prosecution when claims can be

amended, ambiguities should be recognized, scope and breadth of language explored, and clari-

fication imposed. . . . An essential purpose of patent examination is to fashion claims that are

precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be

removed, as much as possible, during the administrative process."). *see* MPEP § 2106

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> **(b) the invention was patented** or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

8.   **Claims 1-20** are rejected under **35 U.S.C. 102(b)** as being anticipated by

Lemelson et al. (USPN 5,983,161), Filed: Aug. 11, 1993; Date of Patent: Jan. 23, 1996.

Regarding claim 1:

Lemelson teaches,

- a method for optimizing driver-vehicle performance, comprising: collecting, on a

  substantially real-time basis, a plurality of driver and vehicle performance charac-

  characteristic measurements **[(col. 1, line 13-51** *"The invention relates generally to*

  an apparatus and method of precisely determining the actual position and attitude

  of a host vehicle operating on a select course or path, such as, a highspeed highway

  and/or in ... subject to operator intervention and override, to avoid collisions or to

  *optimize prevention of injury or damage."***); (col. 15, line 55-58** *"The accuracy and*

  response time performance of the real-time GPS motor vehicle warning and control

  systems and methods herein disclosed may be enhanced with the use of differential

  *GPS implementations."***)]**; evaluating said plurality of driver and vehicle performance

  characteristic measurements to predict current driving environment **[(col. 1, line 13-**

  51 *"The invention relates generally to an apparatus and method of precisely deter-*

mining the actual position and attitude of a host vehicle operating on a select course

or path, such as, a highspeed highway and/or in ... subject to operator intervention

and override, to avoid collisions or to optimize prevention of injury or damage.");

(col. 15, line 55-58 *"The accuracy and response time performance of the real-time*

GPS motor vehicle warning and control systems and methods herein disclosed may

be enhanced with the use of differential GPS implementations.")]; and effecting

changes in vehicle performance aspects based on said evaluation for potentiating

vehicle performance. [(**col. 1, line 13-51** *"The invention relates generally to an ap-*

paratus and method of precisely determining the actual position and attitude of a

host vehicle operating on a select course or path, such as, a highspeed highway

and/or in ... subject to operator intervention and override, to avoid collisions or to

optimize prevention of injury or damage."); **(col. 15, line 55-58** *"The accuracy and*

response time performance of the real-time GPS motor vehicle warning and control

systems and methods herein disclosed may be enhanced with the use of differential

GPS implementations.")]

Regarding claim 2:

Lemelson teaches,

collecting the driver and vehicle performance characteristic measurements further comprises

collecting driving data representing a plurality of target categories. [(**col. 1, line 13-51** *"The*

invention relates generally to an apparatus and method of precisely determining the actual

position and attitude of a host vehicle operating on a select course or path, such as, a highspeed

highway and/or in ... subject to operator intervention and override, to avoid collisions or to

optimize prevention of injury or damage."); **(col. 15, line 55-58** *"The accuracy and response*

time performance of the real-time GPS motor vehicle warning and control systems and methods

herein disclosed may be enhanced with the use of differential GPS implementations.")]

Regarding claim 3:

Lemelson teaches,

the target categories further comprise a plurality of vehicle signals, including at least one of

acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle,

engine speed and brake activity. **[(col. 30, line 15-24** *"The Hazard/Object State Vector also*

serves as an index into the total FAM. ...These output signals are likewise treated as fuzzy

variables with member- ship classes as shown in FIG. 10. Defuzzification takes place in

processing block 214 of FIG. 9 as herein above described.")]

Regarding claim 4:

Lemelson teaches,

collecting the driving data further comprises collecting driving data from different subjects

driving different routes. **[(col. 1, line 13-51** *"The invention relates generally to an apparatus and*

method of precisely determining the actual position and attitude of a host vehicle operating on a

select course or path, such as, a highspeed highway and/or in ... subject to operator intervention

and override, to avoid collisions or to optimize prevention of injury or damage."); **(col. 15, line**

55-58 *"The accuracy and response time performance of the real-time GPS motor vehicle*

warning and control systems and methods herein disclosed may be enhanced with the use of

differential GPS implementations.")]

Regarding claim 5:

Lemelson teaches,

collecting the driving data further comprises, annotating the driving data with the target catego-

ries by the driver during driving. **[(col. 31, line 41-43** *"Thus the driver has the assistance of an*

on-board, real-time expert speaking to him or her and advising on the optimum driving response

to a given roadway condition.")]

Regarding claim 6:

Lemelson teaches,

collecting the driving data further comprises collecting data from sensors for tracking at least one

of eye and head movements in addition to the vehicle signals. **[(col. 1, line 13-51** *"The invention*

relates generally to an apparatus and method of precisely determining the actual position and

attitude of a host vehicle operating on a select course or path, such as, a highspeed highway

and/or in ... subject to operator intervention and override, to avoid collisions or to optimize

prevention of injury or damage."); **(col. 15, line 55-58** *"The accuracy and response time*

performance of the real-time GPS motor vehicle warning and control systems and methods

herein disclosed may be enhanced with the use of differential GPS implementations.")]

Regarding claim 7:

Lemelson teaches,

further comprising establishing criteria for predicting driving environments differentiatable

between highway driving, main road driving, suburban driving and city driving. **[(col. 1, line 13-**

51 *"The invention relates generally to an apparatus and method of precisely determining the*

actual position and attitude of a host vehicle operating on a select course or path, such as, a

highspeed highway and/or in ... subject to operator intervention and override, to avoid

collisions or to optimize prevention of injury or damage."); **(col. 15, line 55-58** *"The accuracy*

and response time performance of the real-time GPS motor vehicle warning and control

systems and methods herein disclosed may be enhanced with the use of differential

GPS implementations.")]

Regarding claim 8:

Lemelson teaches,

further comprising considering at least the following vehicle performance characteristic

measurements in said evaluation step, said vehicle performance characteristics including:

acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle,

engine speed and brake activity. **[(col. 30, line 15-24** *"The Hazard/Object State Vector also*

serves as an index into the total FAM. ...These output signals are likewise treated as fuzzy

variables with membership classes as shown in FIG. 10. Defuzzification takes place in

processing block 214 of FIG. 9 as herein above described.")]

Regarding claim 9:

Lemelson teaches,

further comprising selecting at least one vehicle performance characteristic measurement to be

utilized in the evaluation from the group including: acceleration pedal position, gear selection,

turn indicator activity, vehicle speed, steering angle, engine speed and brake activity. **[(col. 11,**

line 32-48 *"A still further feature of this aspect of the invention warning the operator of the one*

automobile of an expert driving response, and coordinately actuating the control systems only if

a collision remains imminent. The warning step includes, for example, visually indicating the

existence of a hazardous condition, such as, displaying a visually perceptible symbol on a

windshield of the one automobile including the relative position and motion between the one

automobile and any collision hazard. A variety of other warning modes are disclosed including

speech synthesis. A still further feature of this aspect of the invention the step of includes

operating one or more of the following systems depending on the kind of expert driving response

determined by the fuzzy logic associative memory: a brake, acceleration, steering, horn, light,

windshield wiper, seat, mirror, air conditioning, heater, defogger and communication.")]

Regarding claim 10:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further

comprises extracting a plurality of features of interest from the vehicle performance charac-

teristic measurements. **[(col. 1, line 13-51** *"The invention relates generally to an apparatus and*

method of precisely determining the actual position and attitude of a host vehicle operating on a

select course or path, such as, a highspeed highway and/or in ... subject to operator intervention

and override, to avoid collisions or to optimize prevention of injury or damage."); **(col. 15, line**

55-58 *"The accuracy and response time performance of the real-time GPS motor vehicle*

warning and control systems and methods herein disclosed may be enhanced with the use of

differential GPS implementations.")]

Regarding claim 11:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further

comprises averaging each of the vehicle performance characteristic measurements in a pre-

processing step over a predetermined time window to obtain a measure for vehicle performance

characteristic during the predetermined time window. **[(col. 19, line 05-07** *"One way of*

combining such multiple positions may be by an averaging method or a majority rule method.")]

Regarding claim 12:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further

comprises classifying the features of interest into categories of driving environment. **[(col. 15,**

line 18-20 *"Image scanning is used to augment the GPS location and vehicle velocity/accele-*

ration data and to evaluate and classify road and highway hazards as described below.")]

Regarding claim 13:

Lemelson teaches,

evaluating said plurality of driver and vehicle performance characteristic measurements further

comprises calculating a probability of a category of driving environment by a neural network

based on the measure for each vehicle performance characteristic during the predetermined time

window. **[(col. 31, line 03-43** *"In the system of* **FIG. 9,** *a different* **FAM** *is used for each state*

vector of **FIG. 15.** *Furthermore, as indicated in* FIG. 12, *different* **FAM's** *are used for different*

relative accelerations of the controlled vehicle ... real-time expert speaking to him or her and

advising on the optimum driving response to a given roadway condition.")]

Regarding claim 14:

Lemelson teaches,

the category of driving environment further comprises one of a highway driving environment, a

main road driving environment, a suburban driving environment, and a city driving environment.

[(col. 1, line 13-51 *"The invention relates generally to an apparatus and method of precisely*

determining the actual position and attitude of a host vehicle operating on a select course or

path, such as, a highspeed highway and/or in ... subject to operator intervention and override,

to avoid collisions or to optimize prevention of injury or damage.")**; (col. 15, line 55-58** *"The*

accuracy and response time performance of the real-time GPS motor vehicle warning and

control systems and methods herein disclosed may be enhanced with the use of differential GPS

implementations.")]

Regarding claim 15:

Lemelson teaches,

effecting the changes in vehicle performance aspects further comprises adapting at least one of

an engine and a chassis of a vehicle by a vehicle control application based on recognition of a

specific driving environment. **[(col. 31, line 03-43** *"In the system of* **FIG. 9,** *a different* **FAM** *is*

used for each state vector of **FIG. 15.** *Furthermore, as indicated in* FIG. 12, *different* **FAM'**s *are*

used for different relative accelerations of the controlled vehicle ... real-time expert speaking to

him or her and advising on the optimum driving response to a given roadway condition.")]

Regarding claim 16:

Lemelson teaches,

effecting the changes in vehicle performance aspects further comprises effecting real real-time

optimization of at least one of an engine parameter and a chassis parameter to the specific

driving environment. **[(col. 31, line 03-43** *"In the system of* **FIG. 9,** *a different* **FAM** *is used for*

each state vector of **FIG. 15.** *Furthermore, as indicated in* FIG. 12, *different* **FAM'**s *are used for*

different relative accelerations of the controlled vehicle ... real-time expert speaking to him or

her and advising on the optimum driving response to a given roadway condition.")]

Regarding claim 17:

Lemelson teaches,

the vehicle control application further comprises a workload manager. **[(col. 22, line 44-56** *"As*

shown in **FIG. 5,** *the video preprocessor* **102** *performs necessary video image frame*

management and data manipulation in preparation for image analysis.")]

Regarding claim 18:

Lemelson teaches,

-   a system for optimizing driver-vehicle performance, comprising: a plurality of

    sensing devices for collecting, on a substantially real-time basis, a plurality of driver

    and vehicle performance characteristic measurements **[(col. 1, line 13-51** *"The inven-*

    tion relates generally to an apparatus and method of precisely determining the actual

    position and attitude of a host vehicle operating on a select course or path, such as,

    a highspeed highway and/or in ... subject to operator intervention and override, to

    avoid collisions or to optimize prevention of injury or damage."); **(col. 15, line 55-58**

    "The accuracy and response time performance of the real-time GPS motor vehicle

    warning and control systems and methods herein disclosed may be enhanced with

    the use of differential GPS implementations.")]; a computing device coupled to the

    sensing devices via a controller area network bus and communication tool for eval-

    uating said plurality of driver and vehicle performance characteristic measurements

    to predict current driving environment; and a vehicle control application effecting

    changes in vehicle performance aspects based on said evaluation for potentiating

    vehicle performance. **[(col. 1, line 13-51** *"The invention relates generally to an*

    apparatus and method of precisely determining the actual position and attitude of

a host vehicle operating on a select course or path, such as, a highspeed highway

and/or in ... subject to operator intervention and override, to avoid collisions or to

optimize prevention of injury or damage."); **(col. 15, line 55-58** *"The accuracy and*

response time performance of the real-time GPS motor vehicle warning and control

systems and methods herein disclosed may be enhanced with the use of differential

GPS implementations.")]

Regarding claim 19:

Lemelson teaches,

the sensing devices further comprise a plurality of sensing devices for generating a plurality of

vehicle signals, including at least one of acceleration pedal position, gear selection, turn indicator

activity, vehicle speed, steering angle, engine speed and brake activity. **[(col. 30, line 15-24** *"The*

Hazard/Object State Vector also serves as an index into the total FAM. ...These output signals

are likewise treated as fuzzy variables with member- ship classes as shown in FIG. 10.

Defuzzification takes place in processing block 214 of FIG. 9 as herein above described.")]

Regarding claim 20:

Lemelson teaches,

the computing device further comprises a computer application for preprocessing the vehicle

signals to a plurality of input signals for neural network modeling. **[(FIG. 6 & FIG 7; col. 23,**

line 49 to col. 24, line 44*"In another embodiment, the image analyzing computer 50 is*

implemented as a neural computing network with networked processing elements performing

successive computations on input image structure as shown in **FIG. 6** *where signal inputs* **130**

are connected to multiple processing elements **134, 138** *and* **142** *through the network*

connections **132, 136** *and* **140**. *The processing elements (*PE's*) 134, 138 and* 142 *map input*

signal vectors to the output decision layer, performing such tasks as image recognition and

image parameter analysis. **56A** *typical neural network processing element known to those skilled*

in the art is shown in **FIG. 7** *... Manual overrides are provided to ensure driver vehicle control*

if necessary.")]

Conclusion

9.   The prior art made of record and (listed of form **PTO-892**) not relied upon is considered

pertinent to applicant's disclosure as follows. Applicant or applicant's representative is respect-

fully reminded that in process of patent prosecution i.e., amending of claims in response to a

rejection of claims set forth by the Examiner per Title 35 U.S.C. The patentable novelty must be

clearly shown in view of the state of the art disclosed by the references cited and any objections

made. Moreover, applicant or applicant's representative must clearly show how the amendments

avoid or overcome such references and objections. *See* **37 CFR § 1.111(c)**.

Correspondence Information

10.   Any inquiries concerning this communication or earlier communications from the

examiner should be directed to **Michael B. Holmes** who may be reached via telephone at

(703) 308-6280. The examiner can normally be reached Monday through Friday between

8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding After Final

issues, please send it to **(703) 746-7238**. If you need to send an Official facsimile trans-

mission, please send it to **(703) 746-7239**. If you would like to send a Non-Official (draft)

facsimile transmission the fax is **(703) 746-7240**. If attempts to reach the examiner by tele-

phone are unsuccessful, the **Examiner's Supervisor, Anil Khatri**, may be reached at **(703)**

305-0282.

Any response to this office action should be mailed too:

Director of Patents and Trademarks Washington, D.C. 20231. Hand-delivered

responses should be delivered to the Receptionist, located on the fourth floor of

Crystal Park II, 2121 Crystal Drive Arlington, Virginia.

Michael B. Holmes
Patent Examiner
Artificial Intelligence
Art Unit 2121
United States Department of Commerce
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ANIL KHATRI
PRIMARY EXAMINER